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EXPLORING THE AVAILABILITY AND ADEQUACY OF EDUCATIONAL FACILITIES AND TEACHING STAFF AT MOROCCAN HIGHER EDUCATION OPEN-ACCESS INSTITUTIONS: A CASE STUDY OF MOULAY ISMAIL UNIVERSITY

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Abstract:
This study employs an explanatory sequential research design to assess the availability and adequacy of educational facilities and teaching staff at the open-access institutions affiliated with Moulay Ismail University (UMI), Meknes, Morocco, from the perspectives of postgraduate students and professors. The study covers four institutions: the School of Arts and Humanities, the School of Sciences, the School of Law, Economics and Social Sciences, and the Polydisciplinary School of Errachidia. Data were collected through structured questionnaires administered to 742 postgraduate students and 214 professors, complemented by semi-structured interviews with 28 students and 21 professors for qualitative insights and document analysis of official university statistics. The study's methodology integrates quantitative and qualitative data to comprehensively evaluate educational resources and staffing. The findings indicate that the institutions face significant challenges due to insufficient or inadequate resources, struggling to keep pace with increasing student enrollment rates. The study concludes that there is an urgent need to expand institutional capacities, enhance educational facilities, and recruit additional teaching staff to ensure a sustainable and effective learning environment.

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1. Introduction

The quality of education offered by universities is typically evaluated through various indicators such as enrollment and graduation rates. However, these metrics alone do not paint a complete picture, as they heavily depend on the availability of essential conditions that support effective teaching and learning. Key among these conditions are the availability of adequate educational facilities and the presence of a sufficient number of qualified teaching staff.

In Morocco, the Ministry of Higher Education and Scientific Research has made notable strides in expanding access to higher education by significantly increasing enrollment rates across various universities. Despite this quantitative achievement, the Ministry has not succeeded in parallel improving the educational infrastructure or adequately staffing universities to meet the burgeoning demand. This shortfall has been highlighted in multiple reports from both national and international bodies, including the Moroccan Court of Accounts (2021), the National Agency for Higher Education and Scientific Research and Quality Evaluation or SCETSR (2016, 2017, 2022), the Supreme Council for Education, Training and Scientific Research (2018, 2019, 2021), and the World Bank (2007, 2008, 2020).

The issue appears particularly acute at Moulay Ismail University, which has consistently ranked low in national and international assessments. According to the 2023 global university ranking by Times Higher Education (THE), Moulay Ismail University ranked 8th within Morocco and 2458th globally, underscoring its position among the lowest-performing universities domestically and worldwide. This ranking reflects deeper systemic issues, suggesting that the university is struggling to provide a quality educational experience, largely due to inadequate infrastructure and insufficient academic staff. This situation, if left unaddressed, could exacerbate existing challenges, further hindering the university's ability to fulfill its educational mission effectively.

Against this backdrop, the present study seeks to assess the sufficiency, availability, and adequacy of both educational facilities and teaching staff at the open-access institutions affiliated with the UMI, namely the School of Arts and Humanities (FLSH), the School of Sciences (FS), the School of Law, Economics and Social Sciences (FSJES), and the Polydisciplinary School of Errachidia (FP). The study is divided into five sections. The first section offers a concise review of theoretical and empirical research that has explored the impact of educational facilities and human resources on the quality of education. The second section outlines the study's methodology, including the research design, participants, sampling procedures, and data collection methods. The third section focuses on data analysis and description. The fourth section discusses the study's findings

in relation to previous research. Finally, the fifth section presents the study's implications and recommendations.

2. Review of the literature

The adequacy and sufficiency of educational facilities and teaching staff are critical factors influencing the effectiveness of educational systems. According to Leach and Moon (2008), well-resourced educational environments positively impact student learning outcomes by providing access to up-to-date materials and conducive learning spaces. Their study highlights that schools with adequate facilities, such as modern classrooms and libraries, tend to foster better student engagement and academic achievement. Additionally, the quality of teaching staff plays a pivotal role in shaping educational success. Darling-Hammond (2010) underscores that highly qualified and well-supported teachers are essential for delivering high-quality instruction and improving student performance. This is supported by the work of Hattie (2009), who emphasizes that teacher effectiveness is one of the most significant factors contributing to student success.

The relationship between educational facilities, teaching staff, and student outcomes is further explored by Koutsourelakis and Mylonakis (2017), who argue that investment in physical infrastructure and professional development is crucial for enhancing educational quality. Their research reveals that schools with inadequate facilities and insufficient professional development opportunities for teachers struggle to provide effective education, leading to disparities in student achievement. Moreover, the study by Goe *et al.* (2008) demonstrates that systematic support for teachers, including ongoing training and resources, correlates with higher levels of instructional effectiveness and improved student results. This body of literature collectively underscores the necessity of adequate educational facilities and well-prepared teaching staff in creating an environment conducive to student learning and academic success.

Local studies conducted within the Moroccan higher education context have unveiled a range of critical issues concerning the availability and adequacy of educational facilities and teaching staff at Moroccan universities (e.g. SCETSR, 2018, 2019, 2021; Dounia *et al.*, 2024; Elkachradi, 2016). These studies revealed a stark discrepancy between the rapidly increasing enrollment rates and the capacity of educational institutions to accommodate and support this growth effectively. Notably, the findings underscore significant inadequacies in both human resources and physical infrastructure, which adversely impact the teaching and learning environment.

One of the most pressing concerns is the acute shortage of professors, which has been consistently highlighted across various studies. The student-professor ratios in Moroccan universities are alarmingly high compared to international standards, with some institutions reporting ratios as high as 238:1 and 221:1, far exceeding the recommended 25 to 30 students per professor. This shortage is partly attributed to the

large number of professors who retired or took voluntary redundancy following the implementation of the LMD reform (Licence, Master, and Doctorate) without being replaced. This shortage has placed an overwhelming burden on the remaining faculty, who are often overworked and unable to provide the necessary attention and support to students. Reports by SCETSR and individual researchers have further confirmed that Morocco's position in terms of the sufficiency of teaching staff is notably poor on a global scale, highlighting a need for urgent intervention.

In addition to human resource constraints, the physical infrastructure of Moroccan higher education institutions is also critically lacking. The rapid increase in student enrollment, driven by an open-access policy and a significant rise in baccalaureate pass rates, has not been matched by a corresponding expansion in physical facilities. As a result, many institutions experience severe overcrowding, with capacity utilization rates soaring to over 200% in some cases. This has led to inadequacies such as insufficient classroom space, outdated teaching materials, and inadequate research facilities. For example, laboratories in some schools lack essential research materials, while classrooms are often equipped only with basic tools like whiteboards and overhead projectors. The dilapidated state of some lecture halls poses safety risks, and university residence halls are frequently overcrowded and poorly maintained.

The impact of these deficiencies on educational quality is significant. Students and professors alike report that the lack of adequate facilities and resources hampers the effectiveness of teaching and learning. Previous research has consistently linked the availability of educational resources to improved academic outcomes and motivation among both students and faculty (Wößmann, 2003; Wang *et al.*, 2016; Picus *et al.*, 2005; David & Emunemu, 2018). Conversely, inadequate facilities can diminish the quality of education and contribute to lower levels of academic achievement (Fritz, 2007; Greenwald *et al.*, 1996; Onyango, 2012; Beynon *et al.*, 1997).

In summary, the literature consistently supports the view that the sufficiency and adequacy of educational facilities and teaching staff are integral to the effectiveness of education systems. The studies reviewed highlight the importance of investing in both physical infrastructure and teacher quality to enhance educational outcomes. Future research should continue to explore how these factors interact and impact various aspects of the educational experience, ensuring that policy and practice are informed by a comprehensive understanding of their significance.

3. Methodology

3.1 Research design

This study employs an explanatory sequential research design to assess the availability and adequacy of educational facilities and teaching staff at the open-access institutions affiliated with Moulay Ismail University, namely the School of Arts and Humanities

(FLSH), the School of Sciences (FS), the School of Law, Economics and Social Sciences (FSJES), and the Polydisciplinary School of Errachidia (FP).

3.2 Research question

The present study is guided by the following research question:
How do Moulay Ismail University open-access institutions' postgraduate students and professors evaluate the availability and adequacy of educational facilities and teaching staff in their schools?

3.3 Research instruments

3.3.1 Questionnaire

A structured questionnaire was administered to 742 postgraduate students and 214 professors across the four institutions. The questionnaire was designed to gather quantitative data regarding students' and professors' perceptions of the availability and adequacy of educational facilities and teaching staff at their schools. The sampled students are categorized by gender, education cycle, and schools, as illustrated in Table 1, while the sampled professors are classified by gender, institutions, and professional titles, as presented in Table 2.

Table 1: Distribution of the students' sample by gender, school, and education cycle

Institution	Gender		Education cycle	
	Male	Female	Doctorate Students	Master Students
FLSH	108	129	76	161
FS	79	82	49	112
FSJES	101	87	61	127
FPE	86	70	35	121
Total	**N = 742**			

Table 2: Distribution of the professors' sample by gender, school, and professional title

Institution	Gender		Professional title			
	Male	Female	Assistant Prof.	Associate Prof.	Full Prof.	Part-time Teacher
FLSH	35	27	9	25	27	1
FS	26	20	6	22	18	-
FSJES	29	30	8	26	25	-
FPE	26	21	39	8	-	-
Total	**N = 214**					

3.3.2 Semi-structured interviews

To complement and enrich the quantitative data, semi-structured interviews were conducted with 28 students and 21 professors who had completed the questionnaire. These interviews provided qualitative insights into students' experiences and

perceptions, allowing for a deeper understanding of the issues identified through the questionnaire. The students interviewed are distributed vis-à-vis their gender and institutions, as shown in Table 3, while the interviewed professors are categorized according to their gender and years of teaching, as illustrated in Table 4.

Table 3: Demographics of the interviewed students

		Gender		Total
		Male	Female	
Institution	FLSH	4	3	7
	FS	6	1	7
	FSJES	5	2	7
	FP	6	1	7
Total		**N = 28**		

Table 4: Demographics of the interviewed professors

		Gender		Years of teaching	Number of interviewees
		Male	Female		
Institution	FLSH	6	3	24-30	9
	FS	5	2	24-27	7
	FSJES	4	1	23-26	5
	FPE	-	-	-	-
Total		**N = 21**			

3.3.3 Document analysis

The study incorporated document analysis to review official statistics from the presidency of Moulay Ismail University. This analysis focused on statistics related to the university's reception capacity, enrolment rates, and the ratios of students to teaching staff. The purpose was to provide contextual data that supports and elucidates the findings from the questionnaire and interviews.

3.4 Data collection and analysis

The research follows an explanatory sequential approach, where quantitative data from the questionnaire serve as the foundation for further qualitative exploration. The analysis begins with the quantitative results, which are then used to identify key themes and issues explored in the semi-structured interviews. Subsequently, document analysis is employed to provide a contextual backdrop and validate the findings.

3.5 Integration of data

The integration of data from the questionnaire, interviews, and document analysis aims to offer a comprehensive evaluation of the educational facilities and teaching staff at the institutions. The quantitative data reveal general trends and perceptions, while qualitative data from interviews provide nuanced explanations and contextual understanding. Document analysis further supports these findings with empirical data

related to university capacity and resources. Overall, this methodology allows for a robust examination of the study's objective, leveraging both quantitative and qualitative approaches to provide a detailed assessment of educational resources and staff adequacy at Moulay Ismail University's open-access institutions.

4. Results

4.1 Quantitative results

The first objective of the study was to evaluate the sufficiency and suitability of the human and material resources of the sampled schools from the perspective of postgraduate students. The results pertinent to these components are displayed in Table 5.

Table 5: Students' evaluation of the availability and adequacy of educational facilities and teaching staff

Input evaluation items in the students' survey -Resources dimension-	**Agreement degree**					**Desc statistics**	
	SA %	**A %**	**CD %**	**D %**	**SD %**	**M**	**SD**
1. Professors engage students actively in learning.	5.5	66.6	0.3	17.7	9.9	3.40	1.14
2. Professors demonstrated the content and pedagogical knowledge needed to teach in higher education.	17.8	59.8	0.0	14.0	8.4	3.64	1.18
3. Professors deliver their content in an engaging, interactive, and meaningful way to students.	5.1	62.8	0.7	21.3	10.1	2.49	1.09
4. The library supplies, resources, and equipment are satisfactory.	0.0	16.6	0.7	67.7	15.0	2.19	.89
5. The institution offers/offered sufficient internet connection.	3.2	10.6	0.9	34.1	51.2	1.81	1.10
6. University library resources are up-to-date and relevant to my field of study.	5.5	5.5	0.5	58.2	30.4	1.97	1.01
7. The physical classroom environments are comfortable and satisfactory.	12.8	66.0	0.3	18.1	2.7	3.68	1.00
8. The institution provides the necessary and adequate learning facilities such as laboratories, multimedia rooms, study rooms, etc.	0.0	21.3	0.3	36.7	41.6	2.01	1.13

Note: SA[a] : strongly agree, A[b] : agree, CD[c] : cannot decide, D[d] : disagree, SD[e] : strongly disagree.

As is obvious in Table 5, the findings demonstrate that students have opposing views towards the two constructs of resource evaluation. Concerning professors' instructional performance, most students agree (5.5%) or strongly agree (66.6%) that professors engage students actively in the process of learning. Similarly, (17.8%) of them agree, and (59.8%) strongly agree that professors demonstrated the content and pedagogical knowledge needed to teach in higher education. In response to item three, 5.1% of students agree, and 62.8% strongly agree that professors deliver courses in engaging, interactive, and meaningful ways.

However, most students have expressed a global negative position towards the material resources and facilities in their schools, except for the item related to the suitability of the classroom environment, for which most students (78%) agree. In contrast, students are not satisfied with the other items. Specifically, only 13.8% of them agree or strongly agree that their schools offer internet connection, 16.6% consider the library supplies satisfactory, and only 10.10% agree or strongly agree that the resources available in the libraries are up-to-date and relevant to their fields of research. Similarly, only 21.3% of the respondents agree that their institution provides the necessary and appropriate learning facilities such as laboratories, multimedia rooms, and study rooms. These percentages imply that although the LMD program offers qualified professors and appropriate classrooms for students, it failed to provide sufficient and appropriate learning facilities.

Equally important, the present study aimed to evaluate the availability and adequacy of educational facilities and teaching staff at the sampled schools from the perspective of professors. Results are given in Table 6.

Table 6: Professors' evaluation of the resources

Input evaluation items in the professors' survey -Resources dimension-	**Agreement degree**					**Desc statistics**	
	SA %	**A %**	**CD %**	**D %**	**SD %**	**Mean**	**SD**
1. The school where I work has sufficient and suitable instructional materials and resources.	0.0	41.1	0.0	50.5	8.4	2.74	1.09
2. The professor-student ratio is sufficient to implement the LMD.	0.0	27.1	0.9	62.6	9.3	2.46	.99
3. The instructional facilities at the institution provide a comfortable teaching environment.	0.0	39.3	0.0	51.4	9.3	2.69	1.09
4. My research bureau is well-equipped with all the materials I need.	9.3	18.7	0.0	28.0	43.9	2.21	1.41
5. Specialized facilities, such as laboratories, studios, and equipment needed for teaching, are available and satisfactory.	7.5	16.8	0.0	42.1	33.6	2.22	1.28
6. Overall, I am satisfied with the sufficiency and suitability of my institution's human and material resources.	0.0	32.7	0.0	45.8	21.5	2.44	1.16

Note: SA[a] : strongly agree, A[b] : agree, CD[c] : cannot decide, D[d] : disagree, SD[e] : strongly disagree.

As presented in Table 6, professors demonstrated a global negative evaluation of the resources provided in the LMD system, be they material or human. In fact, 67.3% of professors reported their discontent with the sufficiency and suitability of these resources in their institutions. This dissatisfaction is also reflected in the number of professors (58.9%) who disagree or strongly disagree that their institutions have sufficient and suitable instructional materials and resources. Moreover, the highest percentage of respondents (71.9%) think that the professor-student ratio is insufficient. Similarly, a

significant number of professors (60.7%) consider that the instructional facilities at their institutions do not provide a comfortable environment for teaching, while 71.9% of them reported that their research bureaus are not well-equipped with all the materials they need. Lastly, only 24.3% of the respondents agreed or strongly agreed that specialized facilities required for teaching, such as laboratories, studios, and equipment, are available and satisfactory.

4.2 Qualitative results

In line with the quantitative results, which showed that most participants were unsatisfied with the quality of the educational facilities and the learning environment in their schools (see Tables 5 and 6), the qualitative data analysis confirmed this finding. It indicated that students and professors held negative attitudes towards some facilities due to their unavailability, insufficiency, or inadequacy. They considered this a chief impediment to adequate teaching and learning conditions. This section presents and analyzes the findings from interviews and document analysis concurrently to expand and explain the quantitative results of resource evaluation.

4.2.1 Data from interviews

The quantitative results have generally revealed the prevalence of negative attitudes among the participants toward the quality of their schools' educational facilities and infrastructure. To cross-check these results, further qualitative investigation through interviews disclosed a number of problems related to the unavailability or inadequacy of some educational facilities and infrastructure. However, it must be noted that the gravity of these problems, as emerged from interviews, varied across schools. As a result, the findings were organized into sections based on individual school contexts. These findings are discussed in the following subsections, mingled with supportive extracts from interviews capturing students' and professors' perspectives.

- **The School of Arts and Human Sciences**

The professors and students interviewed from the FLSH disclosed several common worries regarding the poor quality of some educational facilities and infrastructure in this school. First, they criticized the poor classroom furniture, advocating that it does not ensure a comfortable teaching-learning environment. This was stressed, for example, by a PhD student describing the old classrooms as: *"spacious rooms filled with old tables and chairs and crowded with students sitting very close to each other, the luckiest ones reserve front places, offering clear audibility of the professor."* However, those sitting at the back can hardly hear the professor's explanations, as these rooms are not equipped with media services such as microphones and loudspeakers.

Several professors also reported this problem, criticizing the physical environment of their classrooms for lacking the necessary instructional facilities, especially the classrooms devoted to undergraduate studies. One of these professors, for example,

claimed that "*lack of instructional aids, educational technologies, in addition to overcrowdedness, are among the major challenges impeding the LMD system from achieving its educational goals*." Within the same line of thought, another professor reported that "*the only educational technology available in the old classrooms, at best cases, is an overhead projector. Professors have to cope with this situation and bring their own computers*." Among the most reported pedagogical materials to be missing were TV sets, computers, microphones, loudspeakers, and multimedia rooms. These technological pedagogical aids, as reported by several professors, are much required to achieve their lessons' objectives and make students engaged and more focused in the classrooms.

In addition, the professors of foreign languages stressed their need for a language laboratory where they can provide pronunciation activities addressing students' listening and speaking weaknesses. These professors admitted that the effectiveness of their spoken courses is minimal without a language laboratory, as they remain purely theoretical. For example, this issue has been raised by a professor from the Department of English Studies, arguing that the lack of a language laboratory "*renders the learning-teaching of spoken English and phonetics challenging and increasingly demotivates students and professors.*" In fact, it is hard to teach students how words and sounds are articulated correctly without having them exposed to audio recordings of native speakers modelling how sounds are produced.

Another no less important educational facility that attracted criticism was the school library. While all professors reported the absence of a well-equipped library for them, arguing that such a facility is much required for doing quality research, students have complained about the poor facilities in the school library. Among the repeatedly cited concerns by students in this regard are the obsolete and limited resources available. In addition, many of the books are incomplete as some irresponsible students tore some pages or even removed complete sections from them. As a result, students reported that they resort to digital resources as an alternative, but unfortunately, there are only three computers in the library. Worse still, the study room attached to the library, which is supposed to be quiet, offering students appropriate conditions to read, concentrate, and do their assignments, is always stuffed with some careless students chatting aloud and distracting their colleagues.

- **The School of Science**

As far as the evaluation of the availability and convenience of educational facilities in the School of Sciences is concerned, the findings from interviews have shown that the perspectives of students and professors of this school converged considerably on the overall adequacy and sufficiency of those facilities, including the classrooms, lecture halls, pedagogical aids, educational technologies, and library facilities. This finding suggests that the School of Sciences has relatively better educational facilities and infrastructure compared to other schools. However, the interviews highlighted multiple

concerns specifically related to the laboratories, about which the respondents raised many issues and concerns.

All professor interviewees from the FS stressed the importance of laboratories, arguing that a considerable amount of science education in general and experimental sciences in particular, such as Physics, Biology, and Chemistry, takes place in laboratories through experiments that facilitate the teaching and learning of scientific phenomena. However, the majority of them (6) complained about the inadequacy of those laboratories for three major factors. These are, namely, the lack of material, the lack of lab technicians, and insufficient funding for research.

The first and most frequently cited reason why professors at the FS are not satisfied with the laboratories is related to a lack of research materials. This was stressed in the response of a professor from the Department of Biology, who argued that "*the biggest challenge facing professors of experimental sciences in the School of Sciences is the insufficiency of research materials in the laboratories*." This issue was overemphasized by another professor from the Department of Chemistry, who maintained that "*the damaged research equipment in the laboratories is often not replaced, and professors, due to insufficient funding from the university, cannot afford the costs of repair*." This situation, as has been advanced by a professor from the Department of Physics, compels professors to "*resort to other laboratories at other universities, but this process delays the progress of their research, sometimes for weeks, as they have to wait for their turns to use the materials*." Other professors reported that, in response to the lack of research equipment in the laboratories, they have recourse to the projection of videos of experiments. However, this does not always lead to the achievement of the lessons' objectives, as it prevents students from conducting experiments and exploring research phenomena by themselves.

The second source of dissatisfaction among professors regarding laboratories has to do with insufficient research funding from the university. All professors have raised this issue, arguing that the materials in the laboratory are very expensive and that the maintenance of this equipment costs a lot of money. However, the annual funds received from the university are not enough to cover all those costs. As a result, professors oftentimes use rudimentary materials in their experiments, which do not always yield accurate and reliable results. At other times, they prefer not to use the material in the laboratory for fear of damaging it and being held accountable for that.

Finally, the third challenge impeding professors' work in the laboratories is the insufficiency of science technicians to help them in the laboratories. Based on the responses of professors, the Department of Chemistry has only three technicians, while the Department of Biology has only six, and the Department of Physics also struggles with only three technicians available. According to professors, this shortage of lab technicians came as a result of not replacing those who retired. In consequence, some professors turn to doctoral students for assistance, although some of them are not skilled enough for this task, posing potential safety risks. Other professors reported that they are

forced to prepare practical lessons themselves, which increases their workload and detrimentally affects their instructional performance.

On the other hand, students at the FS were also unsatisfied with the quality of the laboratories in their school and viewed them as inadequate and ill-equipped to provide a decent environment for experimentation. One of the main criticisms relates to the lack of research equipment. The material that was most reported to be lacking was the HPLC High-Performance Liquid Chromatography, which is a machine used to separate a mixture of liquids. This research instrument, as has been highlighted by many students, is essential in experimental sciences. However, the School of Science affiliated with the UMI possesses only one HPLC, which is broken most of the time. As a result, all doctoral students from the different research laboratories resort to the laboratory in the presidency of the university and wait for their turns to use that machine. In addition, students complained about the insufficiency of other materials such as solvent liquids, agitators, spectrometers, etc.

Students also raised safety issues. In this regard, all students reported that while doing some experiments, they might be exposed to dangerous materials and toxic chemicals, which pose a threat to their health. However, the laboratories lack the necessary safety equipment, including fume hoods, chemical spill kits, face masks, and goggles and garments. This deficiency in essential safety equipment puts students under pressure as they work without the assurance of adequate physical safety measures in place.

The constraints discussed above have significantly impeded students' research progress. In this respect, many students have faced delays in the conduction of experiments, extending their doctoral research to six or seven years due to challenges in accessing the essential material for carrying out those experiments. Other students resorted to laboratories abroad, where the conditions of research are much better, ensuring the attainment of more reliable results from their experiments. It must be noted here, though, that not all students can afford the expensive costs of these laboratories; additionally, some face visa constraints, preventing them from travelling abroad to carry out their experiments.

- **The School of Law, Economics and Social Sciences**

From quite a different perspective, the interviewed professors and students from the FSJES have shown different attitudes toward the educational facilities and infrastructure of their school. Most of them argued that the issue does not lie in the availability or adequacy of those facilities, but rather in denying access of students to some of them, and at times, to the insufficiency of their holding capacities compared to the massive numbers of students enrolled. In this regard, a student said: "*wherever you go in our school, you find crowds of students, and it is hard to find a place.*" A colleague of his emphasized this idea, saying, "*The number of students in groups is huge, so if you come early, you can find a place at*

the front; otherwise, you will have to sit at the back, making it hard to follow the instructions of the professors."

This problem, as emerged from students' responses, seems to be prevalent even in the study room. For example, a PhD student complained about the insufficiency of the holding capacity of this facility, saying, "O*vercrowdedness in the study room is a serious issue. Sometimes, finding an available chair is a challenge, and if you were lucky and found a place, you would not be able to concentrate on your work because of the noise*." Similarly, another PhD student answered that she does not like to read in the study room and when asked to explain why, she replied: "*the time spent in the study room is wasted time; this room is always overcrowded with students who go there to chat not to study*." Moreover, some students mentioned that there are other study rooms in their school, which are always close. One of them elaborated on this point and said: *"Our school has many study rooms which are well-equipped with computers and tables. However, they are always close. Only one is open, and it cannot accommodate all students. I don't know why they don't open those rooms to solve the problem of overcrowdedness and provide a more adequate environment for students to study."*

On the other hand, professors' responses converged significantly on the adequacy of the educational facilities and infrastructure of the FSJES. To express their satisfaction with those facilities, most of them used statements such as "our school has the best infrastructure among the other schools affiliated to the University of Moulay Ismail", "In recent years, most of the buildings in our school have been repaired, and new ones have been built", "*I work in very decent conditions, lecture halls are well-equipped with the necessary pedagogical aids*"; "*there is nothing to say about the educational facilities and infrastructure of our school, they are up to the standards, I would say even of international universities*." These sample quotes show that professors at the FSJES are satisfied with the quality of educational facilities in their institution.

However, when the researcher further probed into the holding capacities of lecture halls, professors' responses revealed that although educational facilities are decent, they are not sufficient to absorb the number of students. In this regard, one of these professors reported that "*the lecture halls in our school are well-equipped, but their holding capacities remain insufficient*." Likewise, a colleague of his said, "*There is an urgent need for building more lecture halls in order to increase the holding capacity of our school because it receives the largest part of new baccalaureate holders compared to the other schools of Moulay Ismail University*."

Generally, students and professors of the FSJES appeared to be satisfied with the quality of the educational facilities and infrastructure at their school. However, the analysis also showed two shortcomings that need to be addressed. These are the issues of insufficient holding capacities of lecture halls and students being denied access to certain facilities, precisely the study rooms available at school.

- **The Polydisciplinary School of Errachidia**

The Polydisciplinary School of Errachidia was founded in 2006 as the first open-access institution affiliated with the UMI, operating outside Meknes City. The Ministry of Higher Education had a dual objective behind founding this school: firstly, to reduce the congestion of the open-access institutions located in Meknes, and secondly, to contribute to the economic and social development of the Draa-Tafilalet region. Following the official statistics of the UMI for 2023, the first objective has been attained, considering the number of students enrolled at the FPE, 25002. However, the analysis of interviews conducted with students from this institution revealed their dissatisfaction with some of its educational facilities and infrastructure, including the university residence halls and educational furniture in seminar rooms and lecture halls.

With regard to the university residence halls, students seem to be divided into two main groups: those who were deprived of this educational facility and those who had access to it but were unsatisfied with its services. In fact, six students reported that their requests to join the university dorms were denied, although they come from low-income families and from remote areas in the region of Draa-Tafilalet. This situation obliged some of them to stay in their hometowns and attend only during the period of exams. This has been the case, for instance, of a student from the region of Imilchil who said: *"I failed to find a place in the residence halls, and the cost of rent was beyond my means. As a result, I missed most of the lectures and attended only during exams, so I could barely pass three or four modules a year, resulting in the extension of my undergraduate studies to five years."*

Other students disclosed their intention to put an end to their educational journeys after failing to find places in the university dorms. This tendency toward discontinuing studies was also reported by the students living in the university dorms who argued that the living conditions in these dorms are inappropriate, citing as arguments the space of rooms which is not enough to accommodate four roommates, distractions of irresponsible students playing loud music or chatting aloud, safety issues related to conflicts among students with different ideological inclinations, and inadequate toilette facilities. These constraints, among others, explain the high percentages of dropout rates in the FPE, which reached 13%, according to the official statistics of the UMI for 2021. Based on this finding, one can conclude that it is high time to reconsider the strict conditions for admission to university dorms, improve their living conditions, and also enlarge their accommodation capacities to absorb the increasing demand of students to benefit from this educational facility, especially those descended from low-income families.

Another educational facility that was repeatedly criticized is the seminar rooms and lecture halls. In this regard, almost all students expressed their outrage at the dire situation of some seminar rooms and lecture halls, which have cracks in the walls, although they were built less than two decades ago. One of these students complained about this situation, asking, "*How can we expect students who study in such terrible and unsafe conditions to focus in the classrooms?"* In addition, some students stirred the poor quality

of educational furniture in these rooms as an impediment to adequate teaching and learning. According to these students, the only pedagogical aids available in the seminar rooms and lecture halls are a data show and a chalkboard. Worse of all, only graduate students have the opportunity to study in seminar rooms, fostering an environment conducive to interactive learning due to the limited number of students. On the contrary, undergraduate students study in lecture halls accommodating large numbers of learners, which does not allow group work, discussions, and the exchange of feedback between students and professors.

Based on the findings discussed above, it can be concluded that most of the educational facilities and infrastructure in the open-access institutions affiliated with the UMI are criticized by students and professors either for their unavailability, insufficiency, or inadequacy. Therefore, it must be recommended that these facilities be provided or maintained in the future to enhance the teaching and learning conditions in these schools and, as a consequence, improve students' academic achievement. To achieve this objective, educational stakeholders should increase the funds allocated to educational equipment and infrastructure and control the management and expenditure of these funds.

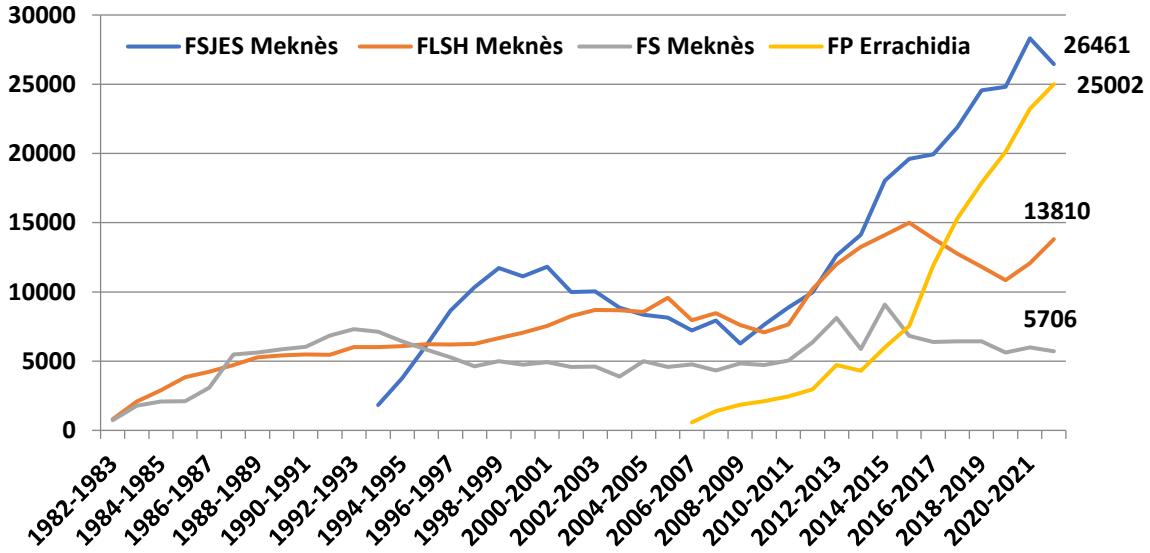
4.2.2 Data from document analysis

4.2.2.1 Discrepancy between enrollment and capacity rates

As was discussed earlier in the literature review chapter, among the key objectives of implementing the LMD system in Moroccan universities were expanding access to higher education and increasing its attractiveness. The realization of these goals requires universities with sufficient enrollment capacities to absorb the constantly growing success rates in the baccalaureate exams. For example, according to the Ministry's official statistics, the number of students who passed the baccalaureate exams has increased from 81.410 (39.2%) in 2004 to 304.068 (73.99%) in 2023, with a significant average increase of 34.79%.

Generally, the results from interviewing professors showed that the UMI had substantially attained the objective of expanding access to higher education thanks to its free and open-access education policy. The results presented in Figure 1 support professors' views, showing the evolution of enrollment rates in the open-access institutions of the UMI from their foundation years to 2021.

Figure 1: Evolution of the number of students in the UMI by institution



Source: The presidency of the UMI (2023).

As demonstrated in Figure 1, the number of students enrolled in the open-access institutions affiliated with the UMI in the last twenty years increased acutely after the implementation of the LMD system in 2003, going from 8663 to 13810 in the School of Letters, from 8851 to 26461 in the School of Law, Economics and Social Sciences, from 576 to 25002 in the Polydisciplinary School of Errachidia, and from 3899 to 5706 in the School of Science. Based on these figures, it can be concluded that the LMD system has attained positive results on the quantitative side as it succeeded in expanding access to higher education and increasing enrollment rates.

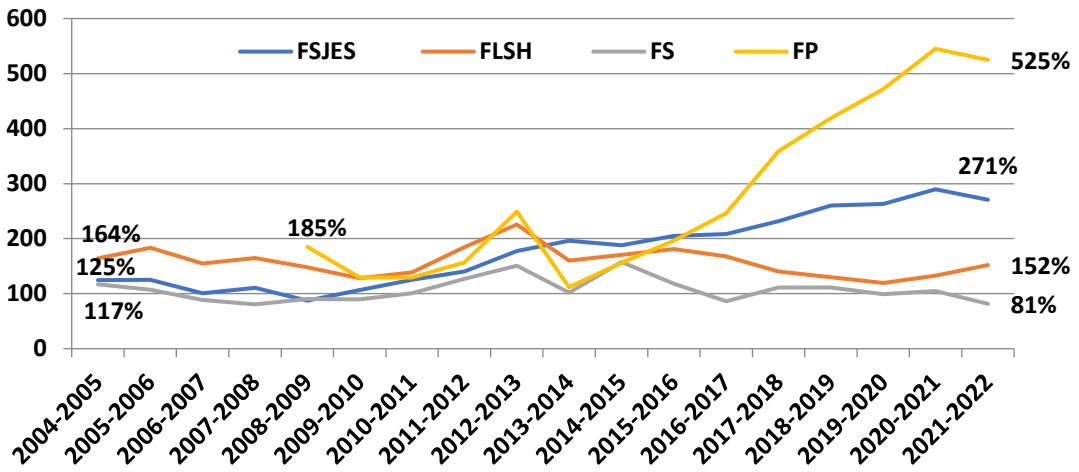
However, on the qualitative side, most professors argued that the massive increase in enrollment rates has negatively affected the quality of education, mainly because the UMI lacked sufficient infrastructure (classrooms, lecture halls, libraries, etc.) for the constantly increasing numbers of students. A professor at the FSJES, for example, referred to this issue in his interview and explained that "*although the implementation of the LMD system yielded good results in terms of increasing attractiveness of the university, it failed to provide sufficient enrollment capacities, resulting in overcrowded classrooms and lecture halls*." This situation, according to the same professor, "*made it impossible for [him] to control [his] classes, engage every student, or promote classroom interaction*." Another professor at the FLSH alluded to the same point of view, arguing, *"After the implementation of the LMD system, we noticed a substantial increase in the number of students enrolled. However, the increasing demand for higher education was greater than the number of places our school could offer. As a consequence, classes became overcrowded. I could not know about the students who attended, those who were absent, those who participated, and those who did not. It was also impossible to pay attention to students with special learning needs or different learning styles."*

Within the same line of thought, another professor at the FS said: "*Although I do not have the exact numbers, I can tell you that the enrollment rates had significantly increased after*

2004, the year when the LMD was implemented in our school." Likewise, as demonstrated in Figure 16, the number of students enrolled in the Polydisciplinary School of Errachidia increased 43 times between 2006, the year of its foundation, and 2021. This massive increase might be ascribed to the fact that most students from the region of Errachidia, who used to study in Meknes, now study in the FPE after its inauguration in 2006, but the enrollment capacity of this school is not ample to host all those students.

In congruence with professors' views regarding their schools' limited enrollment capacities, the statistics obtained from the presidency of the university confirm this finding, indicating that the schools affiliated with UMI operate above their enrollment capacities. Figure 2 illustrates the capacity utilization rates of these schools.

Figure 2: Capacity utilization rates of the open-access schools affiliated with the UMI



Source: The presidency of the UMI (2023).

As shown in Figure 2, contrary to all expectations, the enrollment capacities of the open-access schools affiliated with the UMI, except that of the School of Science, did not increase but rather deteriorated significantly, leading to an overuse of their actual capacities. The FP, FSJES, and the FLSH featured the worst capacity utilization rates with 525, 271, and 152 percent, respectively. The increasing number of high school graduates might explain this overuse of the reception capacity.

The situation is less critical in the FS, which, according to many professors and as demonstrated in Figure 2, still maintains the balance between enrollment rates and its capacity. This balance might be explained by the reduced percentage of baccalaureate holders joining this school yearly, 7.15%, according to the Ministry's official statistics for 2021. However, professors at this school argued that although the enrollment rates in the School of Science are reduced compared to those of the other schools, they still exceed the capacity of the available laboratories, which is one of the challenges facing their practical work with students.

Accordingly, it can be concluded that the LMD system has accomplished its quantitative objectives by increasing the sampled schools' attractiveness and increasing

their enrollment rates. However, it failed to provide sufficient capacities to absorb the growing demand for higher education, resulting in overcrowded classes and lecture halls. Such conditions detract from the quality of higher education, making it difficult for professors to work in an adequate environment. The shortage of professors, another benchmark for evaluating the effectiveness of educational programs, worsened this situation, as will be discussed in the following section.

4.2.2.2 Insufficiency of the teaching staff

The success of any educational system depends not only on the quality of the curriculum and the suitability of the learning and teaching environment but also on the availability of sufficient teaching staff. Thus, another benchmark used by the researcher to evaluate the effectiveness of the LMD system was the student-professor ratio in the sampled schools. In this regard, it is worth noting that the Steering and Monitoring Committee of the LMD Reform (2001), as cited in Tamer (2009, p. 26), asserts that "*on the basis of the accumulated experiences, the available studies and according to different approaches, the approximate supervision rate in the first cycle should be between 20 and 25 students by teacher*." The results emerging from interviewing professors and the official statistics of the UMI revealed that the sampled schools are far away from reaching this average student-professor ratio.

In fact, the vast majority of professor interviewees (17 out of 21) reported that the LMD reform has failed to decrease the student-professor ratios in their schools since the number of professors was insufficient in proportion to the constantly increasing enrollment rates. This shortage in the teaching staff, as has been repeatedly emphasized in the interviews, overburdened professors with tiresome responsibilities, including teaching, assessing, and supervising large numbers of students. For example, a professor from the Department of English Studies at the FLSH highlighted that "*the number of professors in the department is minimal compared to students' annually increasing demand for English studies*." As a result, the same respondent added, "*Professors are in charge of teaching and grading large classes, which is too demanding on their part, as it requires a lot of time and energy*." Similarly, another professor at the FSJES alluded to the same point of view, complaining about "*the heavy workload entailed in the supervision of many students at the same time*," which, according to him, "*leads to physical and emotional exhaustion of the professor; and by consequence, negatively impacts professors' instructional performance and students' learning outcomes*."

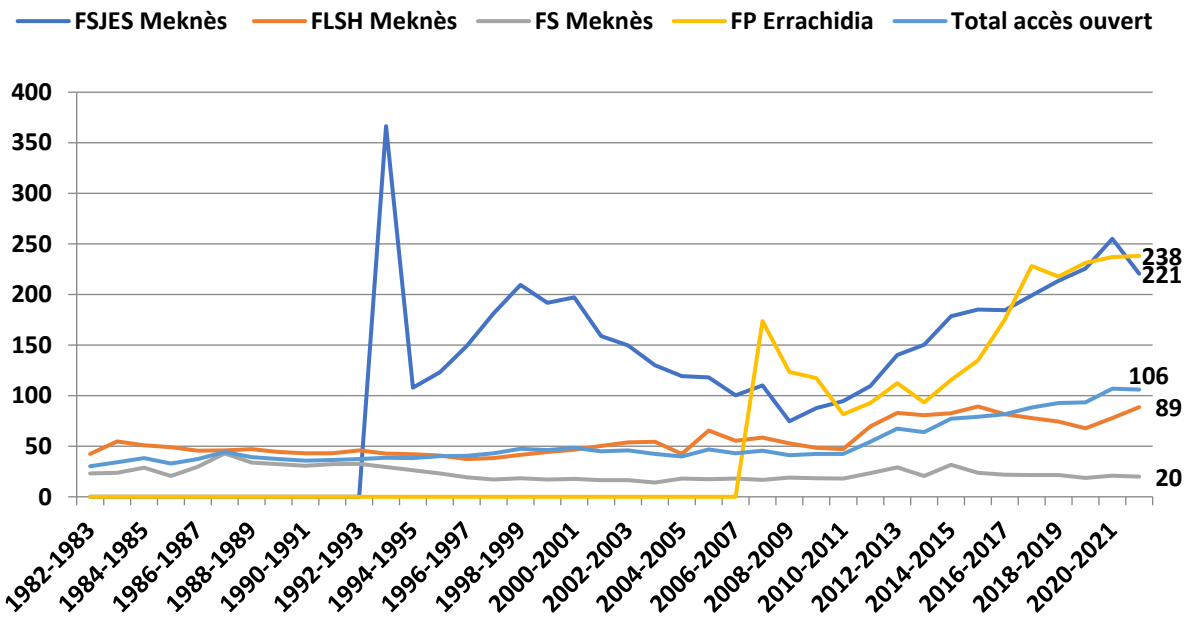
In line with these arguments, the interviewees from the School of Science reported that the number of professors available in this school when conducting this study was insufficient to supervise the practical work sessions (TP). One of these professors stated that "*[he] has to supervise a number of students ranging from 20 to 25 students, bearing in mind that [he] can supervise more than one group per week*." This situation, as highlighted by many of his colleagues, made them resort to tasking some distinguished students with controlling their classmates in the laboratories. However, this does not guarantee

attaining the objectives set for those practical sessions because students might not take the practical courses as seriously as they should when the professor is absent.

Conversely, a few other professors (4) expressed satisfaction with their departments' supervision rates. These include the departments of Arabic Studies with 26 students per professor, the Department of Islamic Studies with 58 students per professor in the School of Arts and Human Sciences, and the Departments of Mathematics and Geology in the School of Science, whose student-professor ratios are 21 and 22, respectively. This finding suggests that the issue of professor shortage varies in complexity from one department to another, which brings to the fore disputes related to the attractiveness of some departments and the effectiveness of professor recruitment policies.

Generally, interviews indicated the prevalence of dissatisfaction among professors regarding the student-professor ratios in their schools. This finding was cross-checked and confirmed by the university statistics presented in Figure 3, illustrating the evolution of the student-professor ratios in the open-access schools affiliated with the UMI from their foundation years to the present.

Figure 3: Student-professor ratios in the UMI by institution



Source: The presidency of the UMI (2023).

As can be seen from the figure, there is a significant discrepancy between what the LMD reform initially promised and what it eventually achieved regarding the student-professor ratio. In fact, apart from the School of Science, the other schools are far from reaching the Ministry's target of 20 or 25 students per professor. The supervision rates exhibited stability from the foundation years of the sampled schools until 2003, after which they increased drastically to reach an average of 106 by 2021. This significant surge

might be attributed to the enormous number of professors who took voluntary redundancy in 2005 or retired but, unfortunately, were not replaced. This situation is expected to deteriorate further in the years ahead, following the Minister of Higher Education's declaration in the House of Councilors in 2022, which envisaged the retirement of more than 5000 university professors by 2030.

However, it must be noted that student-professor ratios vary in complexity from one school to another. While it remains satisfactory in the School of Science, with an average of 20 students per professor, the supervision rates in the other schools, notably at the School of Arts, the Polydisciplinary School of Errachidia, and the School of Law, Economics and Social Sciences, are alarming, standing at 89, 238, and 221, respectively.

In conclusion, the results discussed above underscore the undeniable challenge of a professor shortage within the UMI. This finding is congruent with a report released by the SCETSR in 2018, which ranked Morocco 127th in the world and 11th out of the 14 Arab countries regarding the sufficiency of the teaching staff in higher open-access education institutions. Thus, university and ministry stakeholders are urged to recruit more professors to bridge the widening gap between the number of available professors and the persistently increasing number of students. This will reduce the student-professor ratio and make the teaching-learning process more productive.

5. Discussion

5.1 Inadequacy, unavailability, or insufficiency of some resources

For the process of teaching and learning to take place in suitable and productive conditions, educational institutions need to put in place sufficient and adequate material and human resources. These resources include the teaching staff and the different educational facilities meant to ease professors' and students' teaching and learning tasks, including libraries, classrooms, laboratories, etc. Accordingly, the second major objective within input evaluation was assessing the adequacy and sufficiency of the educational resources of the open-access institutions of the UMI, be they human or material. In this regard, the quantitative and qualitative results of this study have revealed that the sampled schools suffer from a shortage of professors and inadequacy or insufficiency of some educational facilities, which are significant impediments to adequate teaching and learning conditions.

5.2 Insufficient teaching staff

Concerning human resources, the results of this study showed that the open-access institutions affiliated with the UMI suffer from an acute shortage of professors. This issue has been repeatedly raised in professor interviews, where most respondents assert the failure of the LMD reform to decrease the student-professor ratios, arguing that they are overburdened with tiresome tasks, including teaching, assessing, and supervising large numbers of students. In fact, according to the latest official statistics of the UMI, the

average student-professor ratio in its open-access institutions is 106. Looking into this ratio by institution, it has been found that the chronic professor shortage varies in complexity from one institution to another and, at times, from one department to another. For example, while it seems more than satisfactory in the School of Science with 20 students per professor, it reached alarming levels in the School of Arts, the Polydisciplinary School of Errachidia, and the School of Law, Economics and Social Sciences with 89, 238, and 221 students per professor, respectively. These high student-professor ratios are far from what was promised when the LMD was implemented, which is between 25 and 30 students per professor. However, the acute shortage of professors might be explained by the enormous numbers of professors who took voluntary redundancy after the implementation of the LMD reform or retired but were not replaced. The situation is expected to deteriorate further in the coming years, following the official statistics of the Ministry of Higher Education for 2023, which envisage the retirement of more than 5000 university professors by 2030.

The findings of the current study regarding the shortage of university professors seem consistent with the outcomes of previous research. For example, in a report released by the SCETSR in 2018 evaluating the performance of higher education open-access institutions in Morocco, it was found that the country is ranked 127th in the world and 11th out of the 14 Arab countries in the sufficiency of the teaching staff. In addition, the report compared the student-professor ratios in Morocco with those of some neighbouring countries, like Tunisia, where the student-professor ratio in higher education is eight times less than in Morocco. Similarly, Tamer (2009), who evaluated the performance of the LMD system as implemented in the Department of English Studies at Ibn Zohr University, found that the average student-professor ratio was 178 and that the School needed 159 professors to reach the required student-professor ratio, which is 30 students per professor. This outcome is congruent with a previous paper by Jarmouni *et al.* (2021). The study aimed to identify the causes of the problems faced by students in the Departments of Physics and Chemistry in the faculties of Tétouan, Oujda, and Nador. The findings indicate that students do not benefit from sufficient practical work (TP) because of the scarcity of professors who can supervise students. Elkachradi (2016) conducted a similar study at the University of Cadi Ayad on the factors that impeded the success of the LMD in Morocco, the way it did in Europe. He found that human resource management was not put at the centre of reform implementation, concluding that the appropriate implementation of the pedagogical innovations of the LMD, particularly continuous assessment and learner-centred instruction, requires recruiting sufficient teaching staff.

In response to this pressing professor shortage, the Ministry of Higher Education introduced an amendment to the LMD system in 2023, urging students enrolled in doctoral programs to teach and participate in the supervision of undergraduate students. This amendment was justified by the need to boost the training of doctoral students and prepare them to teach at the university. However, two questions arise here: Are these

students professionally qualified to teach and supervise students at the university, and do they possess the content and pedagogical knowledge required for these tasks? No answers could be given to these questions in the absence of studies tackling the issue. However, it should be stated that university and ministry stakeholders are urged to recruit more professors to bridge the widening gap between the number of available professors and the persistently increasing number of students. This will reduce the student-professor ratio and make the teaching-learning process more productive.

5.3 Insufficient holding capacities

From the analysis of the evolution of students' enrollment rates, it has been found that the open-access institutions affiliated with the UMI have achieved great success in terms of expanding access to higher education and increasing enrollment rates. In fact, the number of students enrolled increased acutely after the implementation of the LMD system in 2003, going from 8663 to 13810 in the School of Arts, from 8851 to 26461 in the School of Law, Economics and Social Sciences, from 576 to 25002 in the Polydisciplinary School of Errachidia, and from 3899 to 5706 in the School of Science. This significant increase in the number of enrolled students might be explained by the surge in the number of students who passed the baccalaureate exams, which moved from 81.410 (39.2%) in 2004 to 304.068 (73.99%) in 2023, with a significant average increase of 34.79%. Another explanation might be the open-access policy adopted in the sampled schools, which allows all baccalaureate holders access to these schools without having to sit for any entrance examination.

However, the holding capacities of schools, in terms of physical seating, are not sufficient to absorb such massive enrollment rates, resulting in overcrowdedness and an overuse of their actual capacities. Indeed, the FP, FSJES, and the FLSH featured the worst capacity utilization rates with 525, 271, and 152 percent, respectively. The situation is less critical in the FS, where the capacity utilization rate is 81%, mainly because of the reduced percentage of baccalaureate holders joining this school yearly, 7.15%, according to the Ministry's official statistics for 2021.

The findings related to the insufficient holding capacities of the sampled schools are consistent with those of SCETSR (2018). The study investigated the sufficiency of the holding capacities of Moroccan universities with a focus on open-access schools. The results revealed that although this capacity increased by 70.2% between 2001 and 2016, it remains insufficient considering the surge in the number of students, which increased by 186.7% within the same period. This situation, following the same study, resulted in the overutilization of the capacities of open-access schools, with an average of 201%. The worst situation is underscored in the Schools of Law, Economics and Social Sciences, where the capacity utilization rate reached 262%.

Various other studies have dealt with the related issue in other Moroccan universities. For example, Naji, Ibriz, and Mourdi (2020) explored the holding capacity of Sidi Mohammed Ben Abdullah University, and they found that the use of capacity in

this University exceeds all the standards for quality education with a rate of 186%. This situation, according to the authors, resulted in the deterioration of the university's infrastructure due to overcrowded classrooms and lecture halls. Similarly, Gougou (2013) evaluated the quality of education provided at the University of Mohammed V in Rabat through the lenses of students and professors; he found that overcrowdedness is a serious issue affecting the quality of education and concluded that the massive increase in enrollment rates was not accompanied by an expansion of the infrastructure of this university.

Based on the findings of this study and also those of previous research, it could be concluded that the holding capacities of open-access institutions are insufficient and should be expanded to cope with the increasing demand for higher education. Another possible solution might be creating annexes to the UMI in different cities in order to mitigate the pressure put on the schools operating in Meknes city.

5.4 Inadequate or insufficient educational facilities and infrastructure

In addition to the insufficiency of professors and the holding capacities of the open-access schools of the UMI, the results pertinent to input evaluation have revealed some critical issues regarding most of the educational facilities and infrastructure in these schools. Indeed, the quantitative results have indicated that the highest percentage, adding the two levels of disagreement (78.3%), has been manifested in students' tendency to disapprove that their schools provide the necessary and adequate learning facilities. Professors held similar views, with 67.3% disagreeing or strongly disagreeing that the instructional materials and human resources in their institutions are sufficient and suitable.

The insights gathered from interviews confirmed these quantitative results and revealed that the inadequacy and insufficiency of educational facilities vary in gravity from one school to another. For example, in the FS, both students and professors complained of the inadequacy of laboratories due to a lack of research materials or safety concerns. In the FLSH, the main problems are germane to the inadequacy of the teaching environment in undergraduate classrooms, especially the old ones where the educational furniture (chairs and tables) is not suitable, and the only pedagogical tools available are whiteboards and overhead projectors. In addition, students complained about the obsolete resources in the school library and the inadequate physical seating in the study room. The situation is more critical in the FPE, where most lecture halls and seminar rooms have cracks in the walls, posing serious danger to students' and professors' safety. In addition, the instructional materials in these rooms are limited to overhead projectors and chalkboards, not to mention university residence halls, which accommodate a limited number of students living in inadequate living conditions. Data also revealed that the FSJES is better than the other schools in terms of availability and adequacy of educational facilities, but it suffers from insufficiency of these facilities in comparison to the number of students. All these constraints negatively affect students' and professors'

motivation for learning and teaching, mainly because adequate conditions and sufficient educational facilities are not provided.

Relating these findings to previous research, it seems that they are in complete agreement with the studies which investigated how the lack and inadequacy of educational facilities and instructional materials detract from the quality of education in different ways. For example, it has been found that the lack and inadequacy of pedagogical tools negatively affect professors' motivation and instructional performance (Sephania *et al.*, 2017; Campbell, 1999; Hakielimu, 2011; UNESCO, 2000). Research also proved the existence of a relationship between the availability of educational facilities and instructional material and students' academic achievement (Afework and Asfaw, 2014; Mosha, 2014; Wedgwood, 2007; Adeogun, 2001). In contrast, educational institutions that are well-equipped with the necessary educational facilities and pedagogical materials perform better than those less equipped (Adeogun, 2001; Likoko *et al.*, 2013; Fuller, 1986; Mwiria, 1985).

Given the fact that no previous studies were found on the sufficiency and adequacy of educational facilities and infrastructure in the open-access institutions of the UMI, research that dealt with these concepts in Moroccan universities in general or in other specific universities is included. In fact, similar findings are found in various other local studies. For example, in a study conducted by Dounia *et al.* (2024) on the challenges facing higher education in Morocco, it was found that obsolete infrastructure and insufficient materials are two key factors that hinder the achievement of the objectives of the LMD system. Among the manifestations of this challenge, the authors cited obsolete research laboratories, insufficiently equipped libraries, outdated classrooms, and outdated computer facilities. These issues have also been highlighted in the latest reports released by the SCETSR in 2018, 2019, and 2021. All these reports are in unanimous agreement that there is an urgent need for educational facilities and infrastructure rehabilitation in most Moroccan universities. Furthermore, Elkachradi (2016) explored the factors that impeded the success of the LMD in Morocco, the way it did in Europe. Results from the study showed that Moroccan universities struggle to mobilize the financial resources needed to invest in equipment, which limits their ability to compete with international universities in research and innovation.

Generally, this section has discussed the findings that emerged from evaluating the availability and adequacy of educational facilities and teaching staff at the open-access schools affiliated with the UMI. Based on the results, it could be concluded that the sampled schools are run with insufficient, sometimes inadequate, human and material resources, which cannot cope with the continuous surge in students' enrollment rates. Therefore, expanding the accommodation capacities of schools and improving their educational facilities, as well as recruiting more professors, have become imperative to provide an adequate teaching and learning environment.

6. Implications

It was found that the open-access institutions of the UMI suffer from a shortage of professors, inadequacy and insufficiency of some educational facilities, and insufficiency of their holding capacities. Accordingly, it is recommended that the presidency of Moulay Ismail University, in coordination with the Ministry of Higher Education and the Ministry of Finance, should take action to mend these weaknesses by providing the necessary and sufficient educational resources and facilities. Among the actions that should be taken in this regard, the study suggests:

- Building new lecture halls and classes to absorb the constantly increasing enrollment rates;
- Rehabilitating the currently available infrastructure in the sampled schools;
- Creating more annexes to the UMI in different cities in order to mitigate the pressure put on the schools operating in Meknes City.
- Equipping all lecture halls and classrooms with modern instructional facilities such as overhead projectors, audio-video players, and interactive whiteboards to help professors work in decent and productive conditions;
- Recruiting more professors to reduce the high student-professor ratios, especially in the FSJES, the FLSH, and the FPE;
- Equipping the research laboratories in the School of Sciences with sufficient and adequate research materials and safety equipment;
- Equipping libraries with updated resources to help students and professors conduct their research;
- Putting multimedia rooms at the disposal of students and professors to be used as digital libraries, where they can consult recent publications.

7. Limitations and recommendations for future research

While the study provides valuable insights into the availability and suitability of resources at Moulay Ismail University, it is limited by its focus on postgraduate students and professors only. The perspectives of undergraduate students and the administrative staff of the university were not included, which could have provided a more holistic view. Additionally, the reliance on self-reported data may introduce bias, as students' perceptions may not fully reflect the actual state of resources. Future research should address the limitations identified in this study by broadening the scope to include undergraduate students and administrative staff, thereby offering a more comprehensive view of the resource environment at Moulay Ismail University. Including these additional perspectives would help capture a wider range of experiences and opinions, potentially revealing differences in resource utilization and needs between different student levels and academic staff. Furthermore, to mitigate the potential bias introduced by self-reported data, future studies could incorporate objective measures, such as

resource usage statistics and institutional assessments, to provide a more accurate representation of resource availability and effectiveness. This multi-faceted approach would enhance the validity of findings and contribute to a deeper understanding of how resources are perceived and utilized across the university.

8. Conclusion

In conclusion, this study underscores the critical need for immediate intervention to address the inadequacies in both educational facilities and teaching staff at the open-access institutions affiliated with Moulay Ismail University. The findings highlight that the current resources are insufficient to support the growing student population, jeopardizing the quality of education provided. To sustain and improve the learning environment, it is imperative to expand institutional capacities, upgrade educational facilities, and increase the recruitment of qualified teaching staff. Without these measures, the institutions will continue to struggle to meet the educational demands of their students.

Conflict of Interest Statement
The authors declare no conflicts of interest.

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